



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

SFUND RECORDS CTR
84423

Date: 1/25/00

MEMORANDUM

SUBJECT: Summary of Data Quality

FROM: Carl Brickner, Jr., Environmental Scientist
Quality Assurance Program (QAP), PMD-3

THROUGH: Vance S. Fong, P.E., Manager
Quality Assurance Program (QAP), PMD-3

TO: Bella Dizon, Remedial Project Manager
Southern California Cleanup Section, SFD-7-3

Fourteen (14) water samples from South El Monte were sampled from October 25 to 27, 1999. The samples were submitted to the USEPA Region IX Laboratory for Perchlorate analysis from October 26 to 28, 1999. A data package was submitted to the Quality Assurance Program on December 2, 1999 for final review.

An evaluation of the data package was performed by the QA Program with the goal of producing a detailed Data Validation Report based on clearly defined and documented project-specific data quality criteria and/or method quality objectives. The report identifies significant and noticeable data quality issues/deficiencies and indicates whether the data quality meets the intended use.

This evaluation included: verification of the analytical results and associated quality assurance/quality control data for completeness, verification of the chain-of-custody forms (against laboratory reported information, for signatures, for sample condition upon receipt by the laboratory and for sample preservation), verification of holding times, review of QC summaries, review of blanks for contamination, check of reported results against raw data, a random check (percentage determined by the professional judgement of the data evaluator on a project specific basis) of all the various calculations in the data set (eg. verify and recalculate concentrations of standards, check expiration dates of standards from standard preparation logs, verify calibration criteria, QC concentrations, etc.), check of raw data for interference problems or system control problems. These criteria were all evaluated in the context of the project data quality objectives.

The following data quality issue should be noted:

Due to method limitations as referenced in "The Inter-Agency Perchlorate Steering Committee Analytical Subcommittee Report", 1999 and the State of California Department of Health Services document "The Determination of Perchlorate in Water by Ion Chromatography, Rev. No.0", 1997 perchlorate does not resolve well at low levels in environmental samples with high total dissolved solids, chloride, or sulfate. This method bias may affect perchlorate at project specified levels of interest and should be kept in mind when using the data.

If the data user requires further assistance or has any questions concerning this Summary of Data Quality or the attached Data Validation Report, contact Carl Brickner at (415) 744-1536.

Attachments

cc: Brenda Bettencourt, Laboratory Section, PMD-2

DATA VALIDATION REPORT

SITE: South El Monte
EPA SSI NO.: 4X
CERCLIS ID NO.: CAD980677355
CASE/SAS NO.: R00S06
SDG NOS.: 99299B
LABORATORY: EPA Region 9 Lab, Richmond
ANALYSIS: Perchlorate
REVIEWER: Carl Brickner, Jr., QAP
DATE: January 25, 2000

I. Case Summary

SAMPLE INFORMATION:

Sample Numbers: SEM9901, SEM9902, SEM9903, SEM9904, SEM9905,
SEM9906, SEM9907, SEM9908, SEM9909, SEM9910,
SEM9911, SEM9912, SEM9913, and SEM9914.

Matrix: Water
Analysis: Perchlorate
Collection Date: October 25 to 27, 1999
Sample Receipt Date: October 26 to 28, 1999
Analysis Date: November 4, 1999

Field Blanks (FB): SEM9914
Equipment Blanks (EB): SEM9902 and SEM9905
Background Sample (BG): None
Field Duplicates (D1): SEM9907 and SEM9908
(D2): SEM9911 and SEM9912

ANALYSIS DATES:

| <u>Analysis</u> | <u>Analysis Date</u> |
|-------------------|----------------------|
| Perchlorate by IC | November 4, 1999 |

ATTACHMENTS:

Table 1A: Analytical Results with Qualifications.
Table 1B: Data Qualifiers.

TPO ACTION:

SAMPLING ISSUES: None.
OTHER: None.

TPO ATTENTION:

SAMPLING ISSUES: None.
OTHER: None.

ADDITIONAL COMMENTS:

The analytical results with qualifications are listed in Table 1A. This report was prepared in accordance with EPA document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", February 1994, and referenced State of California Department of Health Services document "The Determination of Perchlorate in Water by Ion Chromatography, Rev. No.0", 1997.

II. Validation Summary

| | <u>Acceptable</u> | <u>Comment</u> |
|--|-------------------|----------------|
| Calibration | [Yes] | [] |
| a. Quality Control Sample | | |
| b. Instrument Performance Check Solution | | |
| c. Calibration Blanks | | |
| d. Quantitation Limit Standard | | |
| Sample Quantitation | [Yes] | [A] |
| Laboratory Reagent Blank | [Yes] | [] |
| Laboratory Fortified Blank | [Yes] | [] |
| Laboratory Fortified Sample Matrix | [Yes] | [] |
| Laboratory Duplicate Sample | [Yes] | [] |
| Sample Preservation and Holding Times | [Yes] | [] |
| Field QC Samples | [Yes] | [] |
| a. Field Duplicate Sample | | |
| b. Field/Equipment Blank | | |

N/A - Not Applicable

III. Validity and Comments

A. The following results are estimated (J) (see Table 1A):

- All results above one-half the quantitation limit, but below the quantitation limit (denoted with an "L" qualifier).

Results above one-half the quantitation limit, but below the quantitation limit (QL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

ANALYTICAL RESULTS

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TABLE 1A

Case No.: R00S06 (SDG: 99299B)
 Site: South El Monte
 Lab.: Region 9, Richmond
 Reviewer: Carl Brickner, Jr., EPA/QAP
 Date: January 25, 2000

VALIDATED DATA

Analysis Type: Perchlorate

Concentration in ug/L

| Station Location | 1 | | | 2 | | | 3 | | | 4 | | | 5 | | | 6 | | | | | |
|--------------------|----------|-----|-----|------------|-----|-----|----------|-----|-----|----------|-----|-----|------------|-----|-----|----------|-----|-----|--|--|--|
| Sample I.D. | SEM9901 | | | SEM9902 EB | | | SEM9903 | | | SEM9904 | | | SEM9905 EB | | | SEM9906 | | | | | |
| Lab Sample I.D. | AB25187 | | | AB25188 | | | AB25189 | | | AB25190 | | | AB25191 | | | AB25192 | | | | | |
| Date of Collection | 10/25/99 | | | 10/25/99 | | | 10/25/99 | | | 10/26/99 | | | 10/26/99 | | | 10/26/99 | | | | | |
| Analyte | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | | | |
| Perchlorate | 5 U | | | 5 U | | | 5 U | | | 3 L | J | A | 5 U | | | 17 | | | | | |

| Station Location | 7 | | | 8 | | | 9 | | | 10 | | | 11 | | | 12 | | | | | |
|--------------------|------------|-----|-----|------------|-----|-----|----------|-----|-----|----------|-----|-----|------------|-----|-----|------------|-----|-----|--|--|--|
| Sample I.D. | SEM9907 D1 | | | SEM9908 D1 | | | SEM9909 | | | SEM9910 | | | SEM9911 D2 | | | SEM9912 D2 | | | | | |
| Lab Sample I.D. | AB25193 | | | AB25194 | | | AB25205 | | | AB25206 | | | AB25207 | | | AB25208 | | | | | |
| Date of Collection | 10/26/99 | | | 10/26/99 | | | 10/27/99 | | | 10/27/99 | | | 10/27/99 | | | 10/27/99 | | | | | |
| Analyte | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | | | |
| Perchlorate | 5 U | | | 5 U | | | 3 L | J | A | 5 U | | | 5 U | | | 5 U | | | | | |

| Station Location | 13 | | | 14 | | | N/A | | | N/A | | | | | | | | | | | |
|--------------------|----------|-----|-----|------------|-----|-----|---------------|-----|-----|--------------------|--|--|--|--|--|--|--|--|--|--|--|
| Sample I.D. | SEM9913 | | | SEM9914 FB | | | Reagent Blank | | | Quantitation Limit | | | | | | | | | | | |
| Lab Sample I.D. | AB25209 | | | AB25210 | | | N/A | | | N/A | | | | | | | | | | | |
| Date of Collection | 10/27/99 | | | 10/27/99 | | | N/A | | | N/A | | | | | | | | | | | |
| Analyte | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | | | | | | | | | | | |
| Perchlorate | 5 U | | | 5 U | | | 5 U | | | 5 | | | | | | | | | | | |

Val-Validity Refer to Data Qualifiers in Table 1B.

Com-Comments Refer to the Corresponding Section in the Narrative for each letter.

D1, D2, etc.-Field Duplicate Pairs.

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample.

N/A-Not Applicable.

N/R-Not Required.

TABLE 1B
DATA QUALIFIERS

NO QUALIFIERS indicate that the data are acceptable both qualitatively and quantitatively.

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. .
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.